Exhibit 44

Roger Blair, Sports Economics

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(excerpted)

SPORTS ECONOMICS

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6   MEASURING MONOPSONY POWER

The essence of monopsony power in the labor market is the ability of a large employer to influence wages by restricting employment. Basically, the monopsonist recognizes that the supply curve is positively sloped and that it can move down along that supply curve to a lower wage by decreasing its employment. In this way, the monopsony wage deviates from the competitive wage. A measure of monopsony power should reflect this deviation. One way to do this is to adapt the Lerner Index of monopoly power to the case of monopsony.[12]

6.1   Lerner Index of Monopsony Power

Following Lerner, we want to measure the percentage deviation of the wage actually paid from the competitive wage at the quantity employed, which would equal the marginal revenue product (MRP). Put differently, the Lerner Index of monopsony measures the monopsonistic exploitation ($MRP - w$) relative to the wage (w). consequently, the Lerner Index (λ) would then be

$$\lambda = \frac{MRP - w}{w}.$$

To maximize profit, the monopsonist will restrict its employment to that quantity where the marginal revenue product is equal to the marginal factor cost:

$$MRP = MFC = w + L(\Delta w/\Delta L).$$

If we subtract w from both sides, we have

$$MRP_L - w = L(\Delta w/\Delta L).$$

Now, divide both sides by w to get the Lerner index:

$$\lambda = \frac{MRP_L - w}{w} = \frac{L}{w} \cdot \frac{\Delta w}{\Delta L}.$$

Because the elasticity of supply is $\varepsilon = (\Delta L/\Delta w)(w/L)$, we see that the Lerner Index is the reciprocal of the elasticity of supply of *labor*:

$$\lambda = \frac{1}{\varepsilon}.$$

Intuitively, this is an appealing result. Increases in the supply elasticity decrease monopsony power. This makes economic sense because the greater the quantity response of labor to changes in the wage, the less influence on wages the monopsonist will have. Put differently, the greater the elasticity of supply, the larger the reduction in employment will have to be to reduce the wage

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[12] See Abba Lerner (1934), "The Concept of Monopoly and the Measurement of Monopoly Power," *Review of Economic Studies*, 1, 157–175. For an adaptation to monopsony, see Roger D. Blair and Jeffrey L. Harrison (1992), "Cooperative Buying, Monopsony Power, and Antitrust Policy," *Northwestern University Law Review*, 86, 331–366.

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Table 17.2. The Influence of Supply and Elasticity on the Lerner Index

ε	0.5	1.0	2.0	5.0	∞
λ	2.0	1.0	0.5	0.2	0

by a given amount. The effect of ε on λ can be seen in several numerical examples, which are contained in Table 17.2.

Thus, when supply is inelastic ($\varepsilon = 0.5$), there is a 200 percent deviation from the competitive result. The more elastic the supply, however, the smaller the deviation. In the limit, when supply is perfectly elastic ($\varepsilon = \infty$), the buyer is essentially in a competitive market and the deviation is zero.[13]

7   MONOPSONISTIC EXPLOITATION: THEORY AND EMPIRICAL EVIDENCE

The term *monopsonistic exploitation* sounds pejorative, but it only refers to the fact that a profit-maximizing monopsonist will hire athletes to the point where $MRP = MFC$ rather than where $MRP = w$. Because $MRP = MFC = w + L\Delta w/\Delta L$, it follows that $MRP > w$ because $L\Delta w/\Delta L > 0$. This is *exploitation* in the sense that the player is paid less than his value to the club. The extent of this exploitation is determined by the supply elasticity. As we will see, the exploitation and the Lerner Index are closely related. Because profit maximization requires

$$MRP = w + L\Delta w/\Delta L,$$

the monopsonistic exploitation will be

$$MRP - w = L(\Delta w/\Delta L).$$

If we multiply the right-hand side by w/w, we have

$$MRP - w = w(L/w)\Delta w/\Delta L,$$

or

$$MRP - w = \frac{w}{\varepsilon}.$$

Thus, the smaller the elasticity of supply, the greater the exploitation.

Whether athletes are exploited in the sense that their MRP exceeds the wage that the team pays them is an empirical question. The evidence is that athletes indeed have been exploited: they have been paid less than they were worth to the team. Some athletes are still being exploited in this sense even though salaries are extremely high for many of them.

7.1   Empirical Evidence

Gerald Scully produced the first – truly pioneering – work on this difficult subject.[14] His research provided valuable insights into the dramatic disparity

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[13] Jonathan Jacobson and Gary Dorman (1991), "Joint Purchasing, Monopsony, and Antitrust," *Antitrust Bulletin*, 36, 1–90, make the point that if supply is flat (i.e., $\varepsilon = \infty$), there is no monopsony power because price cannot be depressed.

[14] Gerald W. Scully (1974), "Pay and Performance in Major League Baseball," *American Economic Review*, 64, 915–930.

between pay and performance in MLB before the advent of free agency. Scully started from the proposition that team revenues increase when the team's winning percentage rises. This makes sense because fans do not get too excited about their favorite team when it is constantly losing. Players contribute to their teams' winning percentages through their performance on the field. As a result, Scully proceeded by estimating the impact of player performance on a team's winning percentage, which is akin to the player's marginal product. He then estimated the effect of an improved winning percentage on the team's revenue, that is, the marginal revenue. In this way, he estimated the marginal revenue product of a player's performance.

Using data for the 1968 and 1969 seasons, Scully estimated marginal revenue products and compared them with the actual salaries paid. He found that the star players fared the worst. The stars received salaries that were about 15 percent of their MRP. Average players did somewhat better because they received salaries that were about 20 percent of their MRP. Interestingly, mediocre players actually were slightly overpaid. In sum, Scully concluded that monopsonistic exploitation was significant. It is important to recognize that Scully's estimates pertained to a period before free agency. During 1968 and 1969, the players were still subject to the reserve clause and therefore had no real options. They were at the mercy of their club. The empirical evidence suggests that mercy was in short supply before free agency.

Things changed when a labor arbitrator set baseball players free. With free agency, one should expect that those players who were free agents would be paid their market value – that is, their MRP, or something very close to it.[15] This is the approach taken by Krautmann, who assumed that free agents received salaries equal to their MRPs.[16] He then estimated a wage equation in which the salary received by a free agent was a function of performance using data on players eligible for free agency. Next, he used that equation to estimate what the wage of those players subject to reserve restrictions would have been had they been free agents. Using the estimated wage, Krautmann substituted a player's actual performance data to get an estimate of that player's wage had he been a free agent. Krautmann then compared the estimated salaries with the actual salaries paid to measure the extent of any monopsonistic exploitation that remained.

For the free agents, there was presumably no difference between their salary and their MRP – that is, no exploitation. Veterans with at least three seasons in MLB, but less than six seasons, were not free agents, but they were protected to some extent by final offer arbitration.[17] When a player and his club cannot agree on a new contract, the player can file for arbitration and have a third party choose between the player's final demand and the club's final offer. The arbitrators look at pay and performance of other players to aid their decision. As a

[15] This inference depends on there being no collusion among the teams. Collusion, of course, could lead to exploitation of free agents.
[16] Anthony C. Krautmann (1999), "What's Wrong with Scully – Estimates of a Player's Marginal Revenue Product," *Economic Inquiry*, 37, 369–381.
[17] We examine final offer arbitration in more detail in Chapter 21.

result, the players should get pretty close to market value. Indeed, Krautmann estimated that these players received about 85 percent of their MRP. This, of course, is much better than the 15 to 20 percent of MRP that players received before free agency. Final offer arbitration, therefore, introduced some market forces and improved those player's fortunes, even though it did not completely eliminate monopsonistic exploitation. For those players with less than three seasons in MLB, there was no market mechanism to protect them. As one would expect, the clubs were somewhat less than generous. Those players who were wholly restricted were paid about 27 percent of their MRP. This is somewhat better than Scully's estimate but a far cry from fair market value.

7.2 A Broader Look at Market Value

Performance measures are easy to find: home runs, batting average, rushing yards, receiving yards, points per game, and so on. For some players, however, their value to a team cannot be captured fully by these performance measures. Consider the case of Terrell Owens, who has been an on-field superstar in the NFL and an off-field negative influence during his career. Despite his unquestioned talent on the field, Terrell Owens was dumped first by the San Francisco 49ers and then by the Philadelphia Eagles for his disruptive attitude off the field. Nonetheless, the Dallas Cowboys signed a three-year deal with Owens. The contract included a $5 million signing bonus and salaries of $5 million for 2006, $8 million in 2007, and $7 million in 2008. At the end of 2006, Cowboys coach Bill Parcells retired. Although the Cowboys could have cut Owens at the end of 2006, they kept him.[18] The Owens example raises an interesting question: How much income has he lost due to the negative influence he brings to the locker room? It is hard to say specifically, but one way to gauge this is to compare his contract to those of other wide receivers after adjusting for performance differences.

For another example, consider the case of Randy Moss, who has always been a controversial athlete. He experienced legal problems while in high school, which led to the withdrawal of a scholarship offer at Florida State University. Moss was a star wide receiver at Marshall University and was drafted by the Minnesota Vikings. Despite complaints about his work ethic and focus during games, Moss was a superstar. After much on-field success and a few off-field problems, Moss moved on to the Oakland Raiders – the last refuge of troubled and troublesome players. Unfortunately, the Raiders had fallen on hard times on the field, and Moss's productivity waned. During the 2006 season, Moss caught only 42 passes for 553 yards, and he scored only three touchdowns. Moss was dissatisfied and complained constantly. He loafed at times and made it clear that he was unhappy and wanted to leave Oakland.

Moss was due to earn $9.25 million in 2007 and $11.25 million in 2008 with the Raiders. During the 2007 NFL draft, however, Moss was traded to the New England Patriots for a fourth-round draft choice.[19] Because of a combination

[18] Owens wore out his welcome in Dallas, moved on to the Buffalo Bills, and in 2010 landed in Cincinnati with the Bengals and Ochocinco – another controversial player.

[19] Judy Battista, "Patriots Accelerate an Overhaul by Trading for the Raiders' Moss," New York Times, April 30, 2007.